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NAVAL POSTGRADUATE SCHOOL

Monterey, California



THESIS

COST BENEFIT ANALYSIS OF GENERAL SERVICES
ADMINISTRATION'S PROPOSED RELOCATION

by

Robert R. Asselin
and
Ernest L. Styron Jr.

December, 1991

Thesis Advisor:

Professor Joseph San Miguel

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Cost Benefit Analysis of
General Services Administration's
Proposed Relocation

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ABSTRACT

General Services Administration is faced with the responsibility of improving its physical distribution capabilities by either upgrading its current facilities or constructing a new facility. A cost/benefit analysis was conducted of all viable alternatives as to the least future cost to the government while maintaining General Services Administration's current level of service and effectiveness. Of the alternatives analyzed, it was determined that it would be of the utmost benefit to the government for General Services Administration's Western Distribution Center to relocate at Sharpe Army Depot, current site of a portion of Defense Logistics Agencies Western Distribution Center. At Sharpe, General Services Administration has the greatest potential for cost savings while improving its warehousing ability well into the next century. Additionally, there are many potential benefits not addressed, such as consolidation of distribution functions between General Services Administration and Defense Logistics Agency, in order to take advantage of greater cost benefits.

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TABLE OF CONTENTS

I. INTRODUCTION	1
A. BACKGROUND	3
B. OBJECTIVES	5
C. RESEARCH QUESTION	6
D. SCOPE, LIMITATIONS, AND ASSUMPTIONS	6
1. SCOPE	6
2. LIMITATION	7
3. ORGANIZATION OF STUDY	8
II. BACKGROUND AND HISTORY	9
A. GENERAL SERVICES ADMINISTRATION	9
B. DEFENSE LOGISTICS AGENCY	16
C. DEFENSE DISTRIBUTION REGION WEST	17
III. ALTERNATIVE COURSES OF ACTION	20
A. REMAIN ON ROUGH AND READY ISLAND	20
B. LEASE FACILITIES	26
C. BUILD A NEW FACILITY	28
D. OTHER ALTERNATIVES	28
E. DLA ADVANTAGES AND DISADVANTAGES	31

IV CONCERNS REGARDING THE AVAILABLE ALTERNATIVES . . .	36
A.REMAIN AT ROUGH AND READY ISLAND	36
B.BUILD A NEW FACILITY AT SHARPE	39
C.LEASE FACILITIES	41
V COMMENTS AND RECOMMENDATIONS	44
EXHIBIT A	48
1.CONSolidATED DISTRIBUTION CENTERS	48
EXHIBIT B	49
1.GSA ORGANIZATIONAL CHART	49
EXHIBIT C	50
1.GSA REQUIREMENTS	50
BIBLIOGRAPHY	53
REFERENCES	54

I. INTRODUCTION

The Department of Defense (DOD) is currently experiencing a severe downward trend in overall funding, and may see a decrease of as much as 40% in the next three years if some members of the U.S. Congress are successful in their re-programming efforts.

The current decrease in defense spending is attributable to the change in the world political order. The apparent collapse of communism in Eastern Europe and the Soviet Union, and our improved stature politically in the Middle East, have all contributed to the increasing pressure to decrease defense spending. These far reaching changes have resulted in a 25% decrease in defense department budget authority over the last two years with more cuts expected. These cuts may run even deeper than expected due to intense lobbying efforts by special interest groups, and Congressman that desire even deeper cuts in defense spending. The goal of the aforementioned people is to glean and spend the so called "peace dividend" and divert spending from defense programs to domestic programs. The overall result of decreased spending is that the armed forces must change the way they do business. The armed forces must immediately review current programs and business practices in order to find the means necessary to maintain cost effectiveness and improve

efficiency, while having fewer and fewer resources available. These changes must be accomplished while DOD is being required to maintain the operational tempo that was in place before the end of the cold war. Additionally, support activities are being pressured to continue to maintain the present level of service.

The combination of world events and deficit spending by Congress and the President have already led to many new cost-cutting and productivity improvement initiatives on the part of the federal government, some of which are the results of a study called the "Defense Management Review (DMR)." The federal supply agencies and armed forces are now in the process of instituting some of these initiatives, such as consolidation of supply activities, unit costing of resource activities, and the introduction of the Defense Business Operating Fund (DBOF).

In this operating environment of austerity and budget cuts, the sharing of limited resources between federal agencies may soon become a necessity. This coordination and consolidation of services can be married to the Department of Defense's efforts to improve the overall processes within its agencies. No longer is the federal government going to be allowed to spend without concerning itself with tying budget restrictions to the level and cost of services it must provide. Service activities within the federal government, such as supply activities, must concern themselves with

matching revenues to cost of operations. If an activity cannot justify its existence, and ensure that its costs are covered by the services it provides, then it will probably be forced to close down and the service discontinued.

A. BACKGROUND

Defense Logistics Agency (DLA) is a world-wide federal services support organization that manages approximately 4.949 million line items, including food, spare parts, and other miscellaneous supplies. DLA actually has cognizance over almost 64% of the federal government's 4.8 million national stock numbered (NSN) line items that are used to support military services wherever they are stationed.[Ref 1]

General Services Administration (GSA) is also a world wide organization which provides US government activities with administrative services, such as building maintenance, and expertise in the area of supply support operations (under the guise of the Federal Supply Service).

Defense Distribution Region West (DDRW) was created as a result of the Packard commission's study in 1985. These findings were presented to congress under the title "Defense Management Review (DMR)" and congress tasked the Department of Defense with implementing these DMR results. The secretary of Defense prepared and implemented Defense Management Review Directives, four of which led to the creation of DDRW under

DLA. In addition, a Distribution region East and Central was established. (Exhibit A)

DDRW is composed of all DOD distribution centers in the greater San Francisco Bay area and currently has excess land and under-utilized facilities available for other uses. These facilities have become available due to internal efforts to reorganize and consolidate distribution activities, as well as Congressional mandated restructuring and reorganization.

As discussed earlier, consolidations between government agencies may become much more common in the future as the need to conserve limited resources increases and funding of federal activities decreases. The main issue to be examined in the context of this document is, where should GSA locate its Western Distribution Center? Should GSA enter into a joint-tenant arrangement with another agency (such as DDRW), or should GSA remain at Rough and Ready Island? These issues can best be addressed by conducting a cost/benefit analysis of the most realistic options open to both parties. GSA has basically three options open for evaluation: (1) remain at Rough and Ready Island (2) pursue a joint-tenant relationship with DLA at Sharpe Army Depot in California, and (3) purchase/lease facilities on the commercial market. Currently, DLA is considering just such a joint-tenant proposal and is open to providing the necessary land and support facilities to GSA, but only if such an arrangement would also be beneficial to the continued existence of the DLA

facility at Sharp Army Depot. The proposed tenant agreement would provide many benefits to both GSA and DLA. Two of the most important benefits are that (1) such an agreement would provide mutual benefits in the area of cost reduction by the utilization of common resources, and (2) such an agreement would solidify the importance of maintaining the Sharp Army Depot and the GSA Western Distribution Center as active operating facilities within the Government. This would make them less prone to being included on base closure lists.

B. OBJECTIVES

The primary objective of this thesis is to determine what course of action GSA should pursue in the organization and location of its warehouse operation. This involves a cost/benefit analysis of the alternatives available to GSA and comparisons of each. Additionally, this paper will attempt to determine if it would be beneficial for DDRW to provide GSA with the land and facilities requirements as proposed, or maintain the undeveloped areas in their present state. The cost/benefit analysis will be used to determine if such an arrangement would be cost effective, if it would in fact reduce operating costs at Sharp, and/or reduce transportation costs associated by combining separate and distinct distribution networks.

C. RESEARCH QUESTION

The primary research question is, if GSA should relocate, whether or not the co-location of GSA and Sharp Army Depot would be beneficial from a cost/benefit standpoint. Secondly, what type(s) of agreement between the two agencies would be required to support such an arrangement, and, lastly, what services and at what costs would each of the parties be required to provide?

As a third concern, what degree of consolidation of physical distribution aspects could result from such an agreement? Many of the customers served by both activities are one in the same. Consolidating less-than-truckload (LTL) and overseas shipments would greatly drive down much of the distribution costs associated with these two modes of shipment. Additional concerns are, would the level of service provided by DDRW be in keeping with GSA's level of service and will the measures of effectiveness employed by GSA be in congruence with those of DDRW?

D. SCOPE, LIMITATIONS, AND ASSUMPTIONS

1. SCOPE

In this study, the benefits as a function of cost were focused on as the basis for our recommendations. There are many non-quantifiable variables that were not taken into account, unless we were able to determine a way in which to quantify them using existing conventions.

Since the analysis is to determine if it would be beneficial for DDRW to provide facilities to GSA, and the potential for consolidation of some distribution functions, we did not take on the larger research question of consolidation of GSA and DLA as a whole. In our opinion this would be a political question rather than a research question because no matter what the outcome of such a study, it would still require a political decision.

2. LIMITATION

The primary limitation involved is the budgeting limits associated with such an endeavor. Even though it may be more beneficial to relocate GSA and save money in the long run for both GSA and DLA, there may not be funding provided to GSA to effect such a relocation prior to 1998 due to budgetary constraints. In other words, even though it may be a good idea from a fiscal standpoint, such a move may not occur for a long period of time.

A secondary limitation of this study is the lack of empirical cost data affecting GSA's alternatives. Since this project is purely in the formative stage, much of the cost data has not been determined, or obtained from outside sources. Much of the detailed cost information would only be forthcoming as the project takes shape and substance sometime in the future.

3. ORGANIZATION OF STUDY

In order to facilitate the discussion of the research questions raised, this study was broken down to five independent sections that follow in chapter format.

Chapter one is an introduction to the research project and discusses research questions, limitations, scope, and general background information of the affected organizations.

Chapter two is a discussion of the background and history of GSA, DLA, WDC, and DDRW. Additionally, the requirements for GSA's facility will be presented, discussed, and listed as Exhibit C.

Chapter three is a detailed discussion of each of the alternatives facing GSA in regards to GSA's selection of a site for their Western Distribution Center.

Chapter four will be a discussion of problems and concerns associated with each alternative. Additionally, this chapter will focus upon problems encountered from the previous chapters and with data provided by the research effort.

Chapter five will include our recommendations and general comments in regard to the decision to be made and the entire research process.

II. BACKGROUND AND HISTORY

In order to facilitate and organize a logical discussion of the four organizations affected by this research paper, General Services Administration (GSA), Western Distribution Center (WDC), Defense Logistics Agency (DLA), and Defense Distribution Region West (DDRW), an understanding of each of their backgrounds and histories is crucial.

This chapter will discuss each organization independently and also their relationships to each other within the federal government's large bureaucracy.

A. GENERAL SERVICES ADMINISTRATION

Created in 1949 as a result of the Federal Property and Administrative Services Act, GSA is a worldwide organization which includes the Federal Supply System. It is responsible for contracting, physical distribution, and facilities maintenance of government land and buildings. [Ref 2] More specifically, GSA is chartered to provide "an economical and efficient system for:

- a. the procurement and supply of personal property and non-personal services,
- b. the utilization of available property,
- c. the disposal of surplus property, and
- d. records management." [Ref 3]

As currently organized, GSA is centered on four separate business functions. These functions are as follows:

1. Public Buildings Services (PBS) - manages the government's civilian real estate portfolio, having the full range of responsibilities for facilities management service. This includes acquisition, design, construction, and operation and maintenance. PBS primarily receives its funding through the Federal Building Fund.

2. Federal Supply Service (FSS) - manages the policies and provisions governing personal property and non-personal services to the Federal Government worldwide. Included are supply services, fleet management, centralized audit of transportation vouchers, and the management of excess or surplus personal property. FSS receives its funding through the Federal Supply Fund.

3. Information Resources Management Service (IRMS) - provides government wide policy, direction, assistance, and coordination for the acquisition, management, and use of automated data processing (ADP) and telecommunications equipment and services.

4. Federal Property Resources Service (FPRS) - provides for further use by Federal agencies of excess government real property, and the disposal of surplus real property by transfer for specific public purposes or by competitive sale to the public.[Ref 3]

GSA serves all U.S. government operations on a global level, has more than 10,000,000 customers annually, and ships merchandise valued at approximately \$1 billion each year. Of this total annual business, approximately 70% is with the defense department.[Ref 2] GSA, through its Federal Supply System, maintains its own distribution system which carries out the functions of requisitioning, receiving, shipping, inventory control, contracting, etc. [Ref 4]

GSA, like DOD, currently finds itself operating in an increasingly changing environment in the federal government. A major environmental change is in the area of competition. Legislative changes requiring full cost recovery in our stock centers afford GSA's clients latitude in choosing the source of supply that meets their requirements of quality and cost. In 1990 alone, over 95% of GSA's funding was through the sale of services to other government agencies. This will grow if GSA is able to manage in a competitive manner, meeting their clients needs while controlling costs. [Ref 3]

Originally, GSA had six full service distribution depots located across the United States, but recently these were consolidated into four regional headquarters. Two full service depots located at Chicago, IL, and Franconia, VA, were closed with the functions being absorbed by the depots located at sites in New Jersey, Texas, Georgia, and California. This reorganization allowed GSA to establish four major inventory service depots in order to provide interaction with its

customers and perform physical distribution functions. [Ref 2] GSA's Western Distribution Center was established as part of the above reorganization in 1986. [Ref 5]

General Services Administration's Western Distribution Center is presently located at Navy Communications Center, Rough and Ready Island. The center is in need of new facilities due to its increased mission under the above reorganization, the lack of modern warehousing equipment, the deterioration of its leased facilities, and serious limitations with the current joint-tenant agreement with the Navy. A new, more modern facility is required in the Western area in order for FSS to support this reorganization and the expected increase in throughput of material and requisitions due to the closure of two of GSA's distribution sites. [Ref 4] Even with the downsizing of the military, it is not expected to decrease GSA's business appreciably due to the nature of the items the military buys from GSA. This is significant because, as previously stated, approximately 70% of the Western Distribution Centers business comes from Defense Department activities.

Rough and Ready Island was originally, and still is, operated and maintained by the Department of the Navy. The island includes 47 warehouses, 17 of which are used by GSA. GSA occupies 1,434,468 square feet of storage space at an average storage height of 12.0 ft and another 619,437 square feet for operational functions; i.e., packing, shipping,

material handling equipment (MHE), bin storage, material returns, etc. [Ref 5] The use of these facilities is provided for under a tenant-lease agreement with the Navy. This agreement grants GSA, through the PBS, a license to use the buildings. The warehouses and base infrastructure were all constructed during and immediately following World War II, and later became one of GSA's western supply depots being managed by the FSS. It wasn't until the reorganization of the service depots in 1986 that the FSS established the Western Distribution Center and began operations as Region 9 in San Francisco. [Exhibit B]

GSA's strategic plan for the Western Distribution Center is to: 1) receive, store, and ship common-use supply items for wholesale and retail support of government agencies, and 2) process common-use supply items and non-stores items for export shipment in support of US military, civilian, foreign military sales (FMS), and AID customer agencies. [Ref 5]

In addition to WDC, Rough and Ready Island is host to numerous other tenants, such as the Defense Disposal Agency, the Directorate of Industrial Plant Equipment, the US Army Defense and Readiness Command Watercraft Storage, the US Navy Sea Systems Command Ships Salvage Material, and the Department of Justice's Border Patrol.

Under the current tenant-lease agreement, the Navy maintains the physical condition of the structures and provides for mutually agreed upon improvements. Currently,

the physical structures are in need of repair and improvement, but the Navy appears unwilling to undertake any such actions. [Ref 6] This lack of improvements or repairs is due to severe funding constraints, as well as apparent lack of interest on the Navy's part to provide benefits to an outside organization. The other activities utilizing warehouse space at Rough and Ready are not as dependent as GSA is upon having modern warehousing equipment. These tenants simply require large tracts of roofed storage. The Navy's lack of improvements and concern for its tenants do not impact these tenants as it does GSA, which is in the business of inventory management and physical distribution.

GSA's present location at Rough and Ready Island has been successful, as evidenced by WDC's effectiveness rate of 99.4% on sales of 253.9 million issues in 1990. [Ref 5] This will become more tenuous in the future as facilities continue to deteriorate with little funding provided for necessary improvements. Also, GSA is unwilling to fund these improvements as it would be upgrading Navy assets. [Ref 6] Even if improvements were made to the facilities, these improvements may not increase FSS efficiency due to problems of inadequate water pressure for fire suppression equipment required to support the incorporation of new warehousing technology. This is the very technology necessary to allow a reduction in the current labor intensive operation of storage and retrieval. Additionally, there would remain only one

access road on and off the island, no rail service, no airfield nearby, and no shipping ports able to handle containerized cargo.

GSA's position is that if the Western Distribution Center is to remain a viable entity and continue to support its customers in a timely and efficient manner into the next century, then it must be improved now. GSA has developed minimum requirements that must be met if they are to move effectively and efficiently into the future. These are categorized as follows:

1. overall space/site
2. general building
3. office space
4. special purpose space
5. warehousing
6. outside laydown areas
7. support services
8. personnel
9. transportation

For more in-depth and space specific information, Exhibit C provides the exact requirements that GSA wishes to incorporate into a new, modern warehouse and distribution center for its West Coast operation. The composite specifications used in this study are 2 million square feet of space. This composite is broken down into 25,000 square feet of office space, 1.34 million square feet of warehouse space, and 441,000 square

feet of laydown space. Additionally, GSA considers 100 acres of useable land to be the minimum amount necessary to meet all of its requirements.

These categories were chosen as headings for the requirements because they loosely follow the budget categories GSA will be concerned with when they POM this project. These are some of the budget categories that will affect GSA in its future decisions regarding the Western Distribution Center. The requirements were also broken down into these categories due to the numerous echelons of bureaucracy that will be involved in the final decision process. For example, in order for GSA to continue with the planning of this project, all of GSA's functional divisions must get involved in the various aspects of the project, including their respective areas of funding. These categories affect different government activities and the requirements can be pursued independently from each other.

B. DEFENSE LOGISTICS AGENCY

Created in 1962, DLA's mission was to remove from the services the responsibility for wholesale supply management of those consumable items (e.g., office supplies, paint, cleaning supplies, etc.) that were being managed by the General Services Administration. GSA was given the responsibility to procure these items for DOD, and over the years since 1962, presently manages about 7% of the nearly 5 million line items

required and stocked by DLA. The military has to "buy" these items from GSA and depend on GSA to properly manage the inventories. DLA was tasked with ensuring GSA compliance with DOD guidelines in the management and stocking levels of these inventories. The importance of DLA in the defense logistics system has grown immensely over the last twenty years as DLA has become the largest supplier of material to government agencies, especially to the four armed services. DLA has taken over inventory responsibility for common use items of all four services, such as food, clothing, electrical components, certain electronics, etc. The importance of DLA's management of selected items is that it was created in an attempt to consolidate supply functions in order to save defense dollars.

[Ref 7]

DLA also assumed responsibility for managing those consumable items which were peculiar to the military, but were used by more than one service. In 1962, DLA managed approximately 10% of the total military requirements. Currently, DLA is responsible for about 62% of the total items used by the military. [Ref 7]

C. DEFENSE DISTRIBUTION REGION WEST

In July 1990, Secretary of Defense Richard Cheney, as part of a Defense Management Review Directive, established the Defense Distribution regions. DDRW is the prototype for the other two distribution regions which are to be located in the

east and in the central portion of the country. Exhibit A shows the proposed location for these Distribution regions. Defense Distribution Region West (DDRW) was established at Tracy, CA, and encompassed the greater San Francisco Bay area. In July 1990, DDRW was founded and included Defense Depot Tracy, Sharpe Army Depot (also known as the San Joaquin Site), and Navy Supply Center (NSC) Oakland distribution functions.

DDRW was founded in order to reduce costs of supply operations and physical distribution systems by taking advantage of consolidation of redundant services being performed by DOD activities in the West. DDRW had its direct roots in the Defense Management Reviews (DMR). DLA established DDRW in an attempt to adhere to the tenets of DMR 901 "Reduction of Supply System Costs", DMR 902 "Combine Supply Depots", DMR 915 "Reduction of Transportation Costs", and DMR 926 "Consolidation of Inventory Control Points (ICP)." [Ref 7] The effectiveness of this reorganization is yet to be determined.

In April 1991 Colonel Creel, then Commanding Officer of DDRW, was interested in determining if it would be of mutual benefit for DDRW to provide another federal agency with some of their excess capacity in order to share resources and reduce costs. [Ref 8] A large 100 acre tract of land was identified at Sharpe Army Depot. The support facilities located at Sharp were confirmed to have excess capacity due to the Defense Department's consolidation of its distribution

facilities to Defense Depot Tracy, CA. If the Defense department continues its down sizing efforts, excess capacity at Sharpe Army Depot will probably increase. Thus, it will be even more beneficial for DDRW to have other warehousing activities co-located at the depot in order to help prevent congressional base closing panels from evaluating Sharpe as a possible base closure candidate.

At this juncture in time, General Service Administration and Defense Logistics Agency are undergoing extreme changes in the way they operate and conduct business. They are under pressure to operate in a more business like fashion by tying revenues to expenses and still maintaining their competitiveness.

In the next chapter we will address some realistic options open to both GSA and DLA from a cost/benefit analysis standpoint.

III. ALTERNATIVE COURSES OF ACTION

The first part of this chapter is an in-depth review of the GSA alternatives currently being considered. These alternatives are:

1. Remain at Rough and Ready Island, and
 - a. Improve facilities or
 - b. Maintain status-quo,
2. Lease warehouse, office, and laydown space from commercial sources, or
3. Build a new facility on government land.

The second part of this chapter will review anticipated cost areas, concerns, possible operational impacts, advantages, and disadvantages DLA may face in the event an agreement is reached and construction of a GSA facility at Sharpe is approved.

A. REMAIN ON ROUGH AND READY ISLAND

The first option under this alternative would be to remain at Rough and Ready Island and improve the facilities. Currently, GSA is paying approximately \$5 million dollars a year to the Department of the Navy under an annually renewable joint-tenant/lease agreement. The costs cover utilities, certain warehouse and facility maintenance, security, and fire

protection. GSA is using approximately 2 million square feet and the annual costs work out to be about \$285 per square foot. Although staying at Rough and Ready Island is a viable option, it is not a cost efficient option because of the following reasons:

a. The warehouses are in poor material condition and are beyond economical repair or improvement. GSA estimates the cost to repair/upgrade the warehouses to a condition suitable for modern warehouse equipment and technology to be approximately \$5 million dollars. Additionally, even if the funds were made available for the repair and upgrading of the buildings themselves, it is still questionable as to whether modern warehouse equipment could be installed for maximum efficiency. The overall dimensions of the current structures may not be suitable, or may not lend themselves to current warehouse technology. Additionally, floor load strength may not be strong enough to support modern warehouse equipment, let alone the additional weight of the items stored within. The interior building height may not be suitable for high rise storage and the requisite fire suppression equipment.

b. The base infrastructure of utilities, fire suppression/repression equipment, water-mains, and road systems are inadequate to support increased operations or the needs of a modern warehouse facility. The current infrastructure is essentially 1940's and 1950's technology, and as such is totally inadequate to support modern warehouse

equipment and technology. According to GSA, the entire electric and fire water-main systems would have to be completely replaced in order to meet current technological needs, specifications, and fire protection standards. This cost, although not estimated by GSA studies, would probably be more expensive than building/installing new such systems due to the cost of disconnecting, removing, and disposing of the old systems.

c. The tenant relationship that currently exists between the Navy and GSA allows very little flexibility for warehouse improvements (i.e., expanding storage capability and upgrading fire protection systems) that GSA might wish to incorporate. Under the current agreement, the Navy does periodic inspections of the warehouses and can dictate to GSA maximum storage heights, minimum aisle widths, and determinations as to what items are "hazardous". Thus, non-warehouse personnel are dictating to GSA how to operate and organize its own warehouses! Obviously, this is not the way GSA wants to do business and this type of interference often leads to hard feelings between all parties concerned, not to mention inefficient storage and less than optimum warehouse management.

d. There is no working railroad transportation system currently available at Rough and Ready Island. It would cost GSA an estimated \$500,000 (Navy contract quotes) to build a new railroad trestle bridge. This does not include reworking

the tracks and switching stations leading to the trestle and those on the island. Although the current primary mode of transportation is by truck, efficient and convenient access to rail transportation is highly desirable from GSA's point of view. This is desirable because it would allow GSA to take advantage of any future decrease in rail transportation charges, as well as open another avenue for shipping stocked items in times of national emergencies or warfare.

e. The current and foreseeable future does not allow GSA to take advantage of cost efficiency savings from modern technology and equipment due to the obsolete base infrastructure. In light of the current fiscal environment faced by all of DOD, and as funds become more scarce and pressure increases to perform better than in the past with less funding, GSA must find ways to increase efficiency of operations. Although it is possible some cost savings can be made within the current warehouse framework, it is even more probable that much greater savings would be realized with the use of modern warehouse equipment, technology, and methodology.

f. Budget cuts within DOD are resulting in even less building and base maintenance by the Navy, and such costs are being forced upon GSA if building and base maintenance are to be accomplished. Yet, GSA is reluctant to put scarce maintenance dollars into buildings owned by another department of the government, especially when such improvements can only

be made with prior approval by that other department. In this case, that other department is the Navy.

g. There is only one access road on and off the island which severely limits traffic flow of both truck and passenger vehicles. Although another bridge could possibly be built, this could only occur after obtaining construction funding, a positive environmental impact report, and approval by the local government. Then, the same type of problems would be faced in trying to expand the current road system. As for the cost of these improvements, they have not yet been estimated.

The second option under this alternative is to remain at Rough and Ready Island and to maintain the status-quo. In the current fiscal environment and in light of the increasing demand for even more drastic cuts in the defense budget, the conservative approach would be to continue operations from Rough and Ready Island.

This approach has several merits. First, it would provide additional time for GSA and Navy to obtain firm quotes for the improvement of the warehouses and for testing of the floor strengths of these warehouses. This is actually only a merit if these two organizations were willing to fund the improvements, which they are not. Secondly, it would allow time to obtain estimates for modernizing the base infrastructure.

With regard to the lease agreement, the additional time would allow for GSA and the Navy to continue negotiations as

to the terms of the agreement and to continue to improve the specific areas where either party is not satisfied.

Another merit to maintaining the status-quo is in the area of rail transportation. The delay would allow GSA to research the feasibility of increased transportation of goods by rail and to estimate the cost savings that increased access to railroad facilities would provide. These cost savings could then be compared with cost estimates for the work needed to restore rail transportation to Rough and Ready Island. This comparison would allow GSA to construct payback tables, a cost/benefit analysis, etc., in order to ascertain the "value" of rail transportation to a distribution facility located on the Island.

Finally, by delaying the decision of whether or not to build a new facility, GSA will have the opportunity of experiencing what the real demand and business needs of GSA's western region are. This will provide information as to exactly what equipment a new warehouse facility would require, or even if a new facility would be necessary.

Although there are merits to maintaining the status-quo, there are still the disadvantages explained in the previous paragraphs, e.g., only one access road, poor material condition of the warehouses and facilities, the current lease agreement, and lack of modern warehouse equipment.

B. LEASE FACILITIES

The second alternative is that of leasing warehouse, office, and laydown space from commercial sources. The current estimate is that GSA will need approximately 1.34 million square feet of warehouse space, 25,000 square feet of office space, and 441,000 square foot of laydown area. Current commercial rates in the San Francisco area range from 30 to 60 cents per square feet per month for warehouse space, from 75 cents to \$1.50 per square foot per month for office space, and 12 to 13 cents per square foot per month for laydown space. [Ref 9] For the purpose of comparison, the current approximate composite rate for Rough and Ready Island is \$2.50 per square foot per year, or \$.208 per square foot per month.

Assuming that GSA could lease indefinitely at the "average" rate for each of the different types of storage space and that the storage locations could be rented in the same geographical area for transportation purposes, then it would cost GSA approximately:

Warehouse space (.45 x 1.34M) - \$603,000 per month

Office space (1.125 x 25K) - \$28,125

Laydown space (.12 x 441K) - \$52,920

Totals \$684,045 per month

or

\$8,208,540 per year

Using today's prices, for a twenty year lease it would cost GSA approximately \$164,170,800 to lease the space it needs now and is expected to need in the future. It should be noted here that according to Barbara Wilson, Project Manager, WDC, there is currently not a single commercial site or group of sites situated geographically in the San Francisco area that would lend itself to this application. Additionally, modern rack and material handling systems, would still have to be installed at these sites in order for this alternative to be economically feasible. However, it should also be noted that large tracts of land are currently being turned from agriculture use into industrial, commercial, or housing uses. Thus, it is inconceivable that a large, industrial, modern warehouse complex might be available in the future. It is also conceivable that a company might join with a local government and agree to construct the warehouse complex GSA desires, and then lease said complex to GSA under a long term lease agreement. This has in fact been done at one GSA site on the East coast; however, it has not been without problems. As an example, problems have developed over site selection, complex acceptance, construction discrepancies, material handling equipment acceptance, and warranties. Although leasing commercial space is a possible solution, GSA at this time is not amenable to using this approach for its West Coast facility due to the problems experienced at its leased

facility on the East Coast and due, also, to the costs of such an arrangement.

C. BUILD A NEW FACILITY

The third alternative is for GSA to build a modern warehouse facility on government owned land. This facility would be almost identical to the facility that GSA is building in Fort Worth, Texas. The budgeted cost for the Fort Worth facility is \$129,900,000. Applying 1.24% for the construction index differential between Texas and California increases the cost to \$161,076,000. Now, allowing 4.2% for 1991 inflation increases, the cost of a similar facility built on a government site would be approximately \$167,841,190.

Table 1 is a comparison of the above three options. Although some of the cost data is not available since GSA has not obtained quotes, the table clearly displays the major factors of the three options discussed above. The table also provides a breakdown of each option in per year dollars for comparison purposes.

D. OTHER ALTERNATIVES

It should be noted that other alternatives are available, such as buying commercial facilities, buying commercial land and building a new facility, or requesting the Navy transfer control and ownership of Rough and Ready Island to GSA. However, each of these alternatives would by their very nature

be more expensive than the three detailed above, because GSA would now be responsible for the maintenance of the sites infrastructure, which as previously mentioned, is in need of drastic improvement. These alternatives are not pursued in depth at this time.

In order to buy a modern warehouse facility from a commercial source, GSA would not only have to pay for the land and the construction costs, but it would also have to pay an additional 10 to 15 percent in the way of profits in order for a company to undertake the contract.

For GSA to buy commercial land and build a new facility thereon, it would obviously cost more than building on land already owned by the government. Not only would the government have to pay the market rate for the land, but it would then have to build the entire base infrastructure.

Finally, for GSA to take title of Rough and Ready Island would not solve the problems of an inadequate infrastructure, obsolete buildings, and access restrictions.

TABLE 1

SUMMARY of GSA'S ALTERNATIVES

1. Remain at Rough and Ready Island:

- Lease per year	\$5,000,000
- Bldg repair/upgrade	\$5,000,000
- Repair trestle bridge	\$500,000
- Construct infrastructure	unknown
- Modern warehouse eqpmnt/technology	unknown
- access improvements	unknown

2. Lease commercial space

- Lease per month	\$684,045
- Lease per year	\$8,208,540
- increase in warehousing operations due to separate storage sites	unknown

3. Build on government land

\$167,841,190

-cost per year

\$5,594,706

(over 30 years)

E. DLA ADVANTAGES AND DISADVANTAGES

In the event that DLA and GSA enter into a joint-tenant agreement at Sharpe Army Depot, and GSA constructs a modern warehouse and distribution center at Sharpe, certain areas of concern arise for DLA. Unfortunately, such concerns are usually accompanied by unexpected, unbudgeted and uncontrollable costs. The following is a list of some of these DLA concerns and/or disadvantages:

a. Increased employee overtime due to disruption of daily routines as a result of increased traffic on and around the base as construction crews and material arrive and building commences.

b. Increase in security forces/overtime due to the need to clear the additional traffic and provide increased access both on and off the base.

c. Lost work hours as base infrastructure is expanded in order to accommodate the new facilities (i.e., water and electrical outages, closures for fire main improvements, etc.).

d. Increased coordination will require additional planning costs in order to provide optimum use of time, facilities, and resources.

e. Morale may temporarily suffer as waiting lines develop for base access, cafeteria, parking, dispensary, etc.

The above items are difficult to quantify, however, once construction contracts have been awarded, schedules established, building plans and infrastructure designs selected, and coordination begins between all concerned parties, then some of these costs "fall out" and then they can be quantified. Although it will be difficult to predict and control the cost and impact areas that DLA may experience, advance coordination will minimize their impact on personnel, daily operations, and construction of the new facility.

Some of the advantages anticipated to be achieved by both GSA and DLA should a joint-tenant agreement be reached, and construction of a GSA warehouse and distribution center be approved, are:

1. Shared Support Services:

- a. Dispensary
- b. Fire Department
- c. Truck Control
- d. Rail Car Switching
- e. Fuel (Gas Station)
- f. Food Services
- g. Hazardous Waste Disposal
- h. Disposal of Excess Property

2. Personnel:

- a. Use of same OPN personnel hire registers
- b. Availability of emergency assistance from each other
- c. Additional training opportunities

- d. Consolidation of some activities to result in need for fewer personnel

3. Transportation:

- a. Minimization of expenses associated with transfer of material to the containerization and consolidation point (CCP).
- b. Better utilization through consolidation of export vans
- c. Ability to consolidate shipments to mutual customers, thereby taking advantage of truckload rates.
- d. Possibility of consolidating UPS shipments to selected areas and shipping as truckload to UPS hubs for local delivery.
- e. Availability of on-site airfield for emergency requisitions.
- f. Closer and easier freeway access for carriers.

4. Miscellaneous:

- a. Possible elimination of the requirement for a GSA owned assets depot.
- b. On site technical assistance from Sharpe\Tracy personnel during design\construction of new WDC.
- c. Access to possible temporary storage, if space should become a problem.
- d. Availability to GSA of "free" land.
- e. Quantity discounts for packing\shipping supplies due to consolidated higher demand.

- f. Possible "loan' of equipment\supplies in emergency situations.
- g. Consolidation of support services (material handling equipment repair, maintenance, etc).
- h. More economic prices on computers\copier machines\etc.
- i. Sharing of infrequently used equipment which might have to be otherwise rented at considerable cost.
- j. Sharing of distribution center assets.
- k. Consolidation of janitorial and recycling support.
- l. Possible inventory consolidation/reduction.

Although the above items comprise many perceived opportunities for cost savings and mutual benefits for GSA and DLA, it should be noted that not all of these benefits may be achieved due to differences in management, operations, policies, goals, and politics of the leaders of the separate organizations.

As in the previous section of the chapter concerning costs, many of the benefits presented are hard to quantify because it is far too early in the proposed project to develop any true quantitative measurements or identify any true cost data.

Additional advantages to DLA/Sharpe, if GSA locates its Western Distribution Center as proposed, are that it will help protect them both from any future base closures, help protect

them from downsizing efforts, and help them obtain the funds required to operate the base effectively and efficiently.

IV. CONCERNS REGARDING THE AVAILABLE ALTERNATIVES

As we have shown in the last two chapters, GSA and DLA have basically three options which are viable and worthy of their consideration for further study. All three of these options, however, have their own unique set of problems that could arise depending upon which option is chosen. In this chapter, we will outline and discuss the known problems and concerns of each of the three options.

A. REMAIN AT ROUGH AND READY ISLAND

The first option is for GSA to maintain the status quo by staying at Rough and Ready Island. This option, in the short run (less than five years), may be the safest and least costly for GSA to pursue. However, in the long run, and potentially even in the short run, this decision probably has the most problems and raises the most concerns:

1. With the present cut backs in military spending and the rush to close bases, there is no guarantee that the communication station at Rough and Ready Island will escape the axe. If the communications station were to close, then GSA may find itself without a facility from which to conduct its operations. The next option available would be for GSA to either buy the facilities directly, or lease the entire complex from the Navy.

2. If GSA were to somehow obtain Rough and Ready Island for their own use, it still does not solve the problem of the deterioration of the base infrastructure. It would end up costing GSA scarce operational and maintenance funds to upgrade the Island's facilities and buildings. Yet, if GSA is to remain competitive and keep it's west coast facility off any near future base closure list, GSA has to improve its cost effectiveness and efficiency.

3. Should the Navy remain at Rough and Ready Island, GSA is still left with 1950's style warehousing, which is in a sad state of disrepair, and still left without a willing sponsor to provide the funding required to upgrade the facilities. In ten years, GSA will be facing the exact same decision they are facing now, that is whether to re-locate or remain at Rough and Ready Island. However, in ten years, there may not really be an option open to GSA other than to re-locate because of the deterioration of the facilities. At that future point, all the warehouses will probably be condemned due to lack of maintenance and it will not be economically feasible to rehabilitate them.

4. GSA will have to improve its facilities at some point in time if it is to remain an active participant in the supply system. In light of past consolidations and the current trend of support services having to pay for themselves, GSA must improve its west coast operations or be faced with closure. Remaining at Rough and Ready Island does not allow GSA to

remain competitive due to the fact that they are unable to take advantage of technological advancements made in inventory control systems. Because of the 1950's warehouses and equipment now employed at Rough and Ready Island, GSA is unable to stay current with the required throughput of material necessary to support customer requirements. Currently, GSA is usually operating at 13-16 days backlog in requisition completions, even while utilizing a second shift.

5. Rough and Ready Island has only one access road for trucks, which severely limits the ease of access on and off the facility for trucking concerns. This causes unacceptable delays in material handling, both incoming and outbound.

6. GSA does not have direct access to railroad facilities, shipping ports, or air terminals. This forces GSA to rely on surface modes of shipments such as UPS, LTL truckers, Federal Express, etc. By not having access to alternative major modes of transportation, GSA is probably spending more than it should for bulk shipments. Also, LTL shipments are more expensive than FTL shipments which GSA is not able to take advantage of in all circumstances.

7. Conservative estimates call for approximately another \$500,000 in repairs to the water-main in order for GSA to increase the water pressure to an acceptable level to efficiently use their current storage racks.

8. GSA is having difficulty in upgrading their tow-veyor to an operating condition. The tow-veyor is a rail guided

material handling cart which greatly increases the throughput of material. Five years and almost one million dollars have been invested in this project and it still is not in an operating condition.

In order for GSA to upgrade Rough and Ready Island into a modern inventory and warehousing facility, it is estimated that it would take approximately \$8 to \$10 million just for the warehouses and the water-main system. Even after such an investment in buildings, there is no guarantee that the facilities could actually be upgraded with modern warehousing equipment due to the severe problems with the infrastructure of the Island and the dimensions and layouts of the buildings themselves. Additionally, the Navy's apparent intent to not sink any more money into fixing current facility problems exasperates the above concerns.

B. BUILD A NEW FACILITY AT SHARPE

Alternative two seems to have the most promise, but still has some major problems associated with it that must be resolved. The more significant problems are:

1. The director at WDC really does not want to move from Rough and Ready Island. It is our opinion that one of the reasons for this is that, since 80% of GSA business comes from the military, the next logical step after GSA relocates would be for DOD to consolidate with GSA and absorb its entire operation. By maintaining its physical separation from DLA,

GSA has been able to stay out of the path of Congressional Staff Committees looking for increased ways to save money through consolidations.

2. In light of congressional concern over federal agencies undertaking new construction projects, and in these times of budget slashing and base closures, new projects are extremely vulnerable to being rejected. Additionally, concerns from the Public Building Service (PBS) over the viability of even having the request forwarded as part of its POM for 1992 must be considered. PBS prioritizes all new projects and a new GSA building project may not be high enough on the priority listing to make it through the first stages, especially if the Director of WDC is not pushing for its inclusion.

3. The likelihood that an acceptable joint agreement can be worked out between GSA and DLA is questionable. There is much to be worked out between these two large organizations if the entire relocation plan is to work. All support services, physical distribution responsibilities, security, personnel situations, and construction requirements must be decided in advance in order to allow for a smooth transition.

4. Obtaining employee support for the relocation is very important. GSA must have their employees' support in order for the move to be successful. Employees will be taking the brunt of the work load during the relocation phase and they can make it move along much more smoothly if they are in support.

5. The physical relocation of GSA's inventory will have to be accomplished once building of the new facility is complete. As new orders are received, they will be received at the new location, but GSA will still have a need to relocate the remaining inventory and office equipment. This will entail a period of transition where service and response times will suffer, the objective during this period is to minimize the time spent in transition.

Under this alternative, there remain some significant problems and concerns from both GSA and DLA. However, these problems are much more solvable than in the first alternative because they, for the most part, deal with interpersonal relationships and negotiations rather than infrastructure (which GSA sees as uneconomical if not impossible to improve). By pursuing the second alternative, GSA is able to control its own destiny and is not at the mercy of the Navy.

C. LEASE FACILITIES

The third alternative is wrought with the most significant problems. Not only would GSA have to locate a complex of warehouses suitable to its needs, but it would then have to deal almost daily with the owner/manager of the property (or different properties if separately owned) for site maintenance, warehouse improvements, access rights, security, etc., in much the same fashion it must deal with the Navy now. In our opinion, this alone makes it inconceivable

as an option for GSA's consideration. Other major problems with the leasing of commercial warehouse facilities are the inherent transportation, receiving, shipping, and inter-transfer problems that would arise from such an arrangement. An example of these problems occurred at the site built in New Jersey. Built a number of years ago under such an agreement, it has yet to reach full operational capability. In this option, not only would GSA have to fund the lease of space, but it might even have to fund the construction of certain physical facilities (i.e., hazardous materials warehouse) that would revert to the contractor when the lease expires.

The next chapter deals with the writers opinions on the alternatives previously described and concludes with specific recommendations.

V. COMMENTS AND RECOMMENDATIONS

The previous four chapters described the situation in which GSA finds itself today. GSA has a real need to upgrade and improve their present position in the inventory and physical distribution business, especially if they are to stay competitive. The question is, what approach should GSA undertake to reach this goal?

There were many different ways and methods to utilize in arriving at an answer to this primary question. All approaches may be correct and may have resulted in different answers depending on the decision makers outlook on the facts as they are presented. In this presentation, we attempted to rely on cost/benefit analysis in determining an outcome. However, we found that at this point in the life of the project, the cost/benefit analysis may only have provided marginal effectiveness in arriving at the correct decision, assuming there is a single "correct" decision in this type of go/no go situation. We found it necessary to bring into the picture some of the subjective information that may be associated with a decision of this magnitude.

Based on our research, we feel that GSA should pursue the relocating option to Sharpe Army Depot. In this case, the cost/benefit analysis supports our recommendation, in the long run. In the short run, it will cost GSA more to pursue this

alternative, but we feel that in order for GSA to remain a viable entity in the future they must modernize. Although budget constraints being what they are obviously have a role in this matter, GSA should immediately commence to lay the ground work to relocate its operations to the Sharpe site. The desirability of GSA remaining at Rough and Ready Island is questionable, given the conditions of the facilities and infrastructure. These factors will only continue to deteriorate and will not improve in the future without an influx of funding. An example is the tow-veyor system. Over the last five years, two major contracts worth about \$1 million have been exercised, and the equipment is still not running.

We empathize with the directors concern that GSA may, at some point, be a candidate for consolidation with other government activities, but if it results in a more efficient system, then it should be pursued. We feel there is room for some real savings under such a joint/tenant agreement between GSA and DLA , and is, therefore, worthy of further research. But consolidation is a fact of life in the 1990's and will continue to gain momentum as the clamor for decreasing governmental budgets and downsizing continues. Possibly, the best approach GSA can take is to be the leader in finding ways to save dollars through consolidation. Therefore, through this relocation, GSA may actually be paving the way of the future.

Also, GSA must be concerned with the quality of the service it provides its customers on a day to day basis. Currently, GSA is running with a 13 day backlog while employing two working shifts. There does not appear any way for GSA to reduce this backlog given the current funding level and number of employees, which, by the way is decreasing. The only way for GSA to improve on this is through use of automation and other labor saving devices. As previously discussed, neither one of these options is open to GSA at its present site due to declining maintenance funding and the expense of upgrading facilities. We feel that GSA owes it to their customers to relocate and improve the level of service it provides by taking advantage of modern, state of the art warehousing equipment and techniques. This backlog will only worsen as conditions deteriorate further at the present location. In a new facility, excess capacity can be designed into the layout in order to absorb business fluctuations and personnel decreases as the federal government continues to downsize.

GSA has a hard decision to make. The conflict to be resolved is: even if scarce funds were available now, does GSA want to upgrade their present facilities? Or, does GSA continue to make do with out-dated facilities knowing that it will cost much more in the future? Based on the empirical evidence as presented in the cost/benefit analysis, and based on the subjective evidence gleaned from personnel interviews

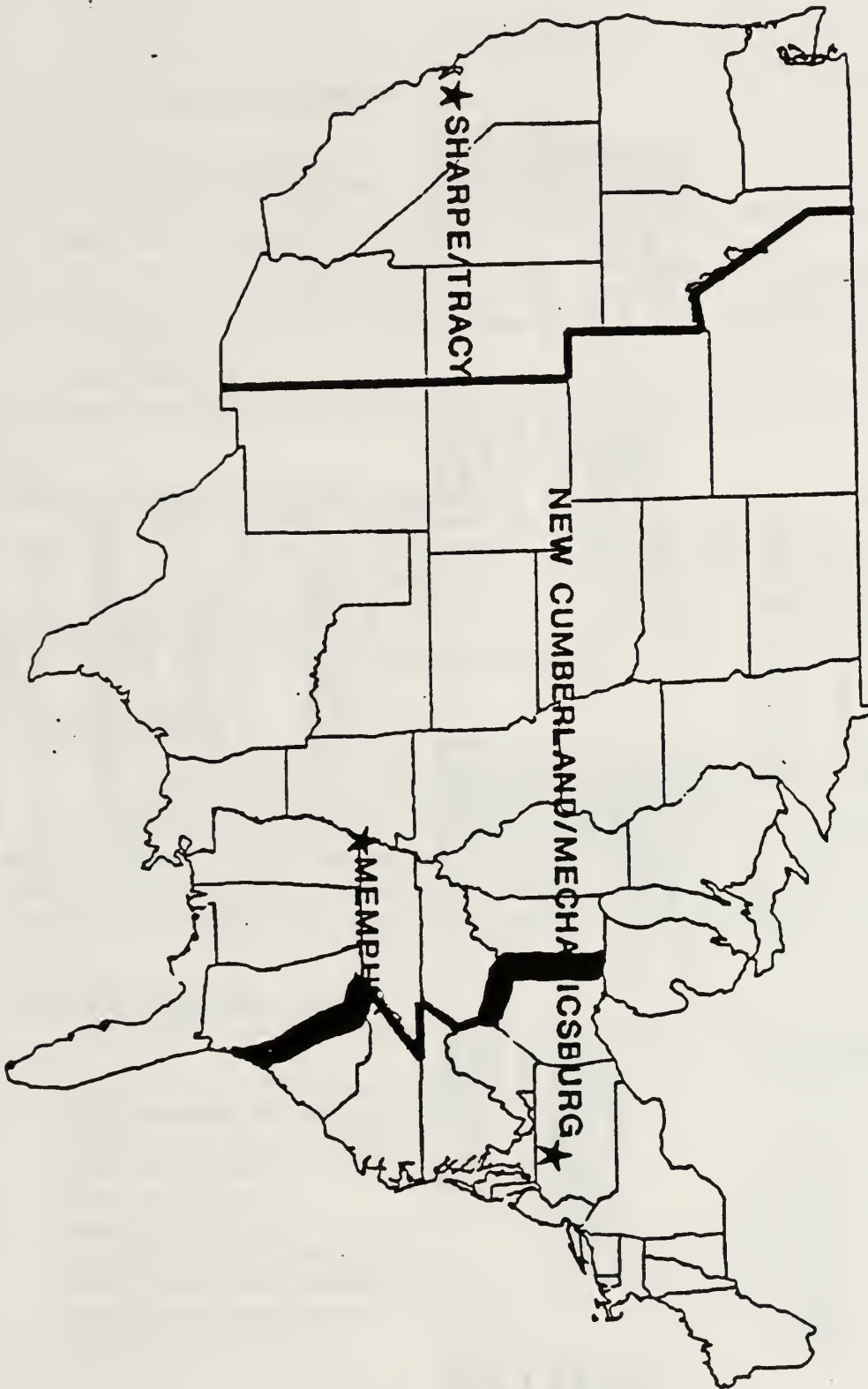
and referenced material, that GSA should not miss this opportunity to relocate to Sharpe, build a new facility and that GSA should begin working towards this goal now.

As for future research areas, numerous studies could be conducted to support/challenge the above recommendation or to obtain more specific cost data. A few such studies are:

- determine the actual workload of GSA's Western Distribution Center,
- cost/benefit analysis of rail transportation versus other means of transportation,
- cost/benefit of modernizing/replacing the infrastructure at Rough and Ready Island, and
- cost/benefit of installing modern warehouse equipment in the current warehouses at Rough and Ready Island.

1. CONSOLIDATED DISTRIBUTION CENTERS

DEFENSE DISTRIBUTION REGION HEADQUARTERS



1. GSA ORGANIZATIONAL CHART

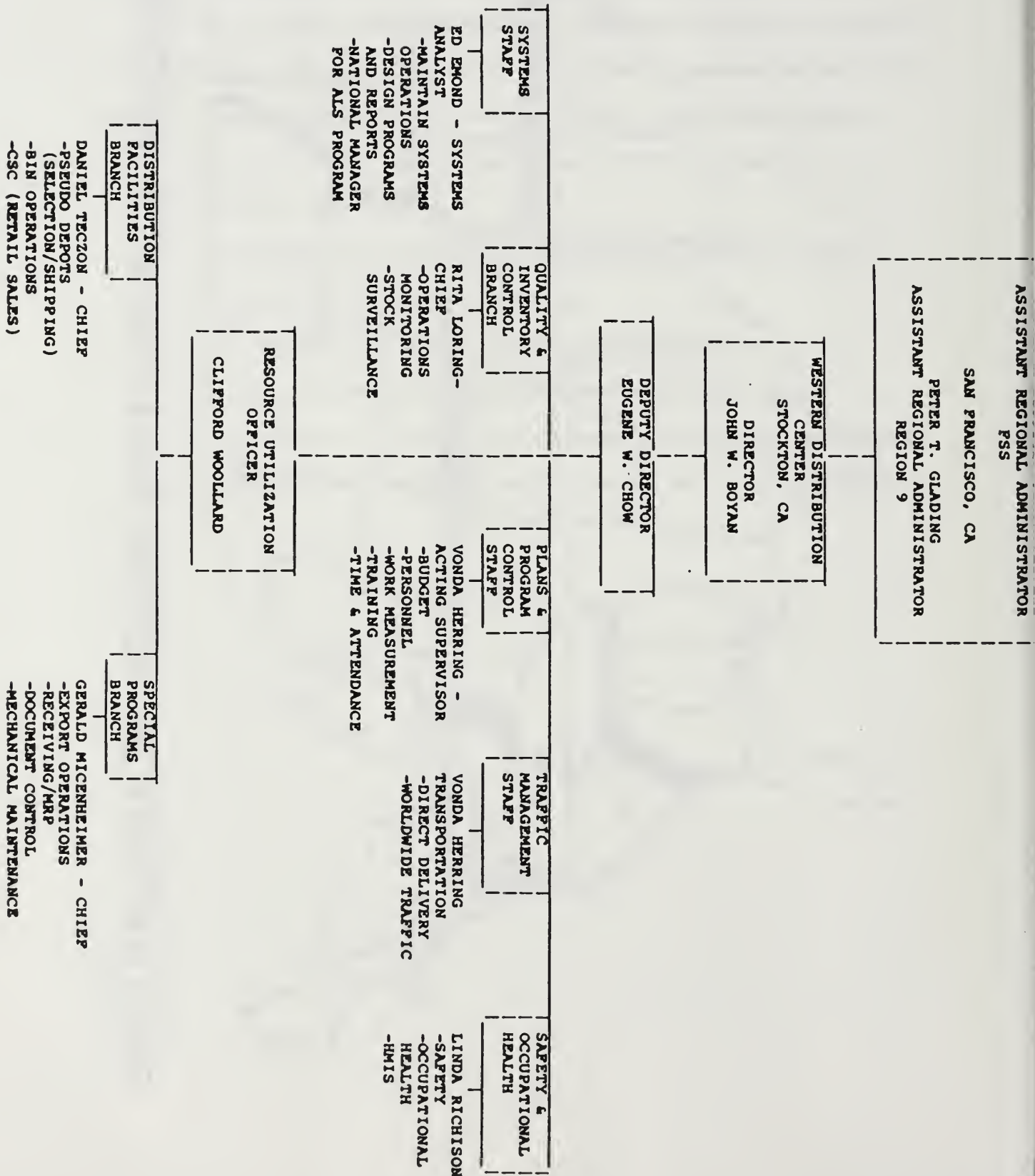


EXHIBIT C

1. GSA REQUIREMENTS

- 1.5 million square feet of useable land
 - 90-100 acre parcel of land
 - access to rail, air services, water transportation, and surface transportation
 - site location within 35 mile radius of current location in order to alleviate dislocation costs of moving employees
 - must be located within one mile of major highways such as 5/99/205/580
 - an access road from highway to facility which is able to accommodate a minimum of 250 passenger vehicles and 100 trucks per day

General Building Requirements

- back-up power generation capabilities in which to maintain operation in the event of power failure
- must be fully sprinklered to support stacking to 30 feet
- uninterruptible power source for all computer systems throughout the center
- must meet seismic requirements

Office Space

- 25,000 square feet, multi-level may be considered
- in floor electrical, telephone, and computer cabling
- raised flooring to at least 24 inches
- heating and air conditioning ducting for personal comfort and computer requirements
- this space to also include specialized areas for cafeteria, training/conference room, fitness center, shower and bathroom facilities and childcare center

Special Purpose Space

- 142,000 square feet to be utilized as follows:

TYPE	ESTIMATED SIZE
storekeeper/stockroom	1,000
lunchrooms/breakrooms	4,000
bathrooms/lkr rooms	2,400
battery room	12,000
UPS storage	1,000
security cage	20,000
refrigerated storage	40,000
hazardous materials room	20,000
computer/adp room	2,000
first aid room	300

janitorial contractor room	500
telenet room	100
laboratory	400
MHE/MME parts room	1,000
welding booth	900
MHE/MME shop	25,000
box/crate shop	4,000
paint booth	3,200
disposal/MRP area	20,000

-this space will be located throughout the main warehouse complex

-must be physically segregated from the storage areas due to the volatility of the items being stored or the type of work being performed

-further requirements for each type of space would be available upon final decisions and would include temperature controls, special electrical/exhaust/noise reduction systems/fencing/security etc.

Warehouse Storage

-1,332,200 square feet of open warehouse space under one roof

-height to permit useable racking and stacking to 30 feet
 -floor load requirement is 800 pounds per square foot
 -environmentally controlled to reach 65 degrees in winter and 80 degrees in summer

-8 ground to building access ramps
 -100 automatic dock levelers equipped with dock locks and automatic roll-up or automatic bi-parting doors

-ground level to warehouse truck access
 -requires multiple outlets for computer station hookups and portable computer terminals

-additional specific requirements available upon design of facility from designers

Outside Space

-440,700 square feet to be used for various functions
 -concrete not asphalt

-perimeter must be fenced and lighted with controlled access through a guard station

-bus stop with covered waiting area near entrance to offices

-outside space will be broken down into the following areas and sizes:

TYPE	ESTIMATED SIZE
pallet/nestainer area	10,000
employee parking for 250 vehicles	100,000
fuel storage area	10,000
guard shack	200
truck weighing scale	1,800

railcar weighing scale	5,000
dumpster storage	10,000
high pressure washer area/tank	1,200
trash compacting area	1,000
truck/trailer parking	300,000
playground	1,500

Personnel Services

-must have industrial medical support personnel available during working hours and on call

-must include a full equipped dispensary, staffed by a fully qualified registered nurse

-ambulance and emergency medical technicians within a 15 minute response area from time of emergency call

-food service capabilities such as cafeteria, vending machines, mobil canteens, etc.

-availability of money access means whether it be check cashing facility or instant bank machines

Fire and Security Requirements

-must have own fire department on site trained to handle a variety of fire types including hazardous material type casualties

-police department must be manned and equipped to operate base entrance, truck check-in, security patrols, traffic safety, parking violations, and perimeter control on a 24 hours basis 365 days per year.

The above listed requirements are the minimum acceptable that GSA has considered this early in the planning process. This are considerations that must be present before an alternative will even be considered for further analysis and consideration.

Although in some cases vague, they are however enough for GSA to begin preliminary research into alternatives at its disposal in trying to solve its warehousing situation and its future into the next century.

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Thesis

A823 Asselin

c.1 Cost benefit analysis of
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Thesis

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